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(19) **United States**(12) **Patent Application Publication** (10) Pub. No.: US 2002/0069134 A1  
Solomon (43) Pub. Date: Jun. 6, 2002(54) **SYSTEM, METHOD AND APPARATUS FOR  
AGGREGATION OF COOPERATIVE  
INTELLIGENT AGENTS FOR  
PROCUREMENT IN A DISTRIBUTED  
NETWORK**

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(57) **ABSTRACT**

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**Related U.S. Application Data**

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Cooperative intelligent negotiation agents (C-INAs) operate in a distributed communications environment for the automated negotiation and procurement of products, services and bundles. Buyer-side aggregation occurs by pooling C-INAs with common interests within specific time frames that are activated by seller INA promotions. Buyer C-INAs can have several modes, including neutral agency (broker or intermediary) role, the leader role and the follower role. C-INAs use multilateral and multivariate negotiation parameters. Sellers (using S-C-INAs) may cooperate in order to share information so as to provide correct pricing for complex combinations of items from buyers. Buyers can cooperate in order to receive aggregated pricing opportunities on multiple item bundles from a plurality of sellers using combinatorial auctions. Dynamic INAs, which switch buyer and seller role, may also use aggregation and combinatorial auction methods. Because they are autonomous, C-INAs use evolutionary computing technologies to move beyond their initial programming constraints to adapt to complex changing circumstances. Analytical agents inform C-INAs and transaction agents complete and track transactions.

**Disintermediated Arbitrage Of Multi-item Bundles  
Between Multiple Sellers & Multiple Buyers using D-INA's**